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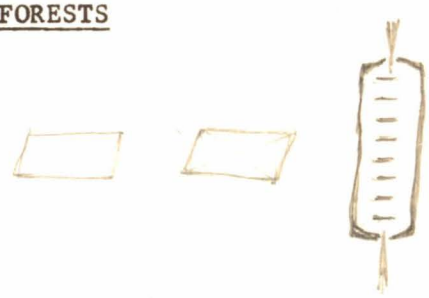
PROGRAM FOR THE NATIONAL FORESTS



COMMUNICATION

from the

SECRETARY OF AGRICULTURE

transmitting

a report relative to

a "Program for the National Forests"

March 1959

United States Department of Agriculture

COPY

DEPARTMENT OF AGRICULTURE

WASHINGTON 25, D. C.

March 23, 1959

The President of the Senate
United States Senate

Dear Mr. President:

A report entitled "Program for the National Forests" is transmitted herewith for information of the Congress and appropriate reference.

President Eisenhower in his State of the Union message in February 1953 called attention to the vast importance to this Nation, now and in the future, of our soil and water, our forests and minerals, and our wildlife resources. He indicated the need for a strong Federal program in the field of resource development.

On July 31, 1953, the President supplemented that message by sending to the Congress a special message relative to a program designed to conserve and improve the Nation's natural resources.

In referring to the national forests administered by this Department and to other public lands, the President stated in that special message that the Federal Government has a responsibility to manage wisely those public lands and forests under its jurisdiction necessary in the interest of the public as a whole. Important values exist in these lands for forest and mineral products, grazing, fish, and wildlife, and for recreation. Moreover, it is imperative to the welfare of thousands of communities and millions of acres of irrigated land that such lands be managed to protect the water supply and water quality which comes from them. In their utilization of these lands, the people are entitled to expect that their timber, minerals, streams and water supply, wildlife and recreational values should be safeguarded, improved and made available not only for this but for future generations. At the same time public lands should be made available for their best use under conditions that promote stability for communities and individuals and encourage full development of the resources involved.

Accordingly, provisions for a marked increase in management activities on the national forests have been made in recent years. These Federal properties have been substantially improved. The flow of values stemming from them has markedly increased. Our management experience clearly dictated the need for still more intensive development and management.

As a result, in 1956 I asked the Forest Service to develop a long-range conservation program for national-forest resources. The first result

of this request was a 5-year program, "Operation Outdoors;" the second is the enclosed "Program for the National Forests."

This conservation program embraces all the renewable resources of the national-forest system -- water, timber, recreation, forage, and wildlife habitat. It includes both long-range objectives and interim proposals. The program provides for the continued, orderly use and development of the renewable resources of these Federal lands in accordance with the basic conservation principles of sustained yield and multiple use. What is done in the next 10 to 15 years will largely determine whether these vastly important public lands will contribute by the year 2000 their fair share to a greatly expanded national economy.

The national forests are widely scattered throughout the United States, occurring in all but 10 States and in Puerto Rico. They are of direct benefit to millions of people. From them are derived an impressive portion of the Nation's supply of meat, fiber, shelter, water for irrigation, industrial, and domestic purposes, hydroelectric power, feed for livestock and wildlife, and outdoor recreation.

These national forests belong to all American citizens. Their resources and services are available for use by everyone. In recent years the use of these lands has been increasing steadily. Demands are now such that a comprehensive program for the orderly growth of development and management activities is of demonstrated urgency. Our rapidly growing population and expanding economy indicate mounting and competitive pressures for national-forest resources.

Legislative authorities for the recommended program are generally adequate. Supplemental legislation will be proposed as the need arises. Appropriation requests to implement the program will be submitted to the Congress in future years in connection with budget presentations after due consideration of the overall fiscal needs and resources of the Federal Government.

A similar letter is being sent to the Speaker of the House of Representatives.

Sincerely yours,

/s/ Ezra Taft Benson

Secretary

Enclosure

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PROGRAM FOR THE NATIONAL FORESTS [1/]

There are presented herein long-range objectives and a short-term conservation program for the national forests and associated lands. The long-range objectives are related to the year 2000 and the short-term program to what needs to be done in the next 10 to 15 years toward meeting current needs and attaining long-range objectives.

This program has been developed after much study. The Department of Agriculture has recently completed an exhaustive study of the U. S. timber situation entitled "Timber Resources for America's Future." "Operation Outdoors" is a 5-year recreation program for the national forests. Research needs are based in part on the findings of a Departmental Committee on Research Evaluation. The Forest Service has long maintained a project work inventory for the national forests. These and other studies are the background for the objectives and program herein developed.

The statutory authorities under which the national forests and associated lands are administered, and under which research is conducted, are generally adequate to permit carrying out the program subsequently outlined. Additional legislation which would be helpful in carrying out the program will be recommended as needed, particularly legislation to facilitate development of an adequate road system.

The National-Forest System

The national forests of the United States are invaluable national assets. These Federal properties, consisting of forest and rangelands and high mountain watersheds, occur in 39 States and Puerto Rico. There are 181 million acres of national-forest land grouped into 148 national forests. Eighty-seven percent of national-forest land occurs in the West.

1/ Prepared by the Forest Service, United States Department of Agriculture.

Of the land area of the continental United States, 1 acre out of every 12 is in national forest. In the West it is about 1 acre out of every 5. Every citizen owns a share of the national-forest system. It might be said that every man, woman, and child in the United States owns 1 acre of national-forest land.

The national forests consist largely of land reserved from the public domain by Presidential proclamation under the Act of March 3, 1891. These lands have always been in Federal ownership. President Theodore Roosevelt proclaimed 148 million acres of public domain as forest reserves--far more than any other President. In 1905, the forest reserves were placed under the administration of the Secretary of Agriculture and the Forest Service was created to administer them. Later their name was changed to national forests to reflect a conservation policy of resource utilization rather than of preservation.

Most of the national-forest land in the East was purchased under the Weeks Law of 1911, as amended in 1924, which authorized purchase of lands to protect the watersheds of navigable streams and for timber production.

Pursuant to the Act of June 4, 1897, the 1911 Act, and others, the national forests have been administered under the dual policies of sustained yield and multiple use of resources. Research has been conducted mainly under the Act of May 22, 1928, as amended.

The national forests yield water, timber, forage, recreation, game and other wildlife, and minerals. Western agriculture and industry are dependent on water flowing from national-forest watersheds; hundreds of thousands of people earn their livelihood processing timber grown on national forests; millions of domestic livestock graze national-forest ranges; and many millions of people seek the national forests for rest, relaxation, and spiritual uplift. All of the renewable resources are to be utilized at a high sustained level of productivity and in harmonious relationship each with the other. This is the basic policy.

Most national-forest resources and services, such as recreation, wildlife habitat, waterflow, and scenery cannot be evaluated in monetary terms. There is no known way to measure the multiple intangible values and services of the national forests; but the timber, forage, and land alone are appraised at well over 7 billion dollars.

The national forests are revenue-producing properties. Twenty-five percent of such revenues is distributed to counties in which national-forest lands are located in lieu of direct taxes. Current annual revenues are about 100 million dollars and more than a billion dollars has been received in total from the sale of national-forest goods and

services. National-forest payments received by the counties, coupled with Federal expenditures for roads and fire control which States or counties would otherwise make, substantially exceed the taxes that the national forests would pay if subjected to ordinary assessment and levy.

In addition to the national forests, the Forest Service administers some 65 land-utilization projects totaling over 4.5 million acres in 27 States. These are largely forest and rangelands, submarginal for private ownership and acquired by the Federal Government during the 1930's for purposes of conservation and rehabilitation. The lands are administered under Title III of the Bankhead-Jones Farm Tenant Act of July 22, 1937, and with the same general sustained-yield and multiple-use objectives as the national forests. 2/

National Forests in a Changing World

Rapid change in the United States is everywhere evident. Highway construction, housing developments, and expanding urban areas are prevalent throughout the land. The two foremost economic indicators of these and other changes are population and gross national product.

In the 13 years since the end of World War II population in the United States has increased 32 percent. An estimate of 332 million persons by the end of the century is more than double the 1950 census. In the same half century, gross national product is expected to increase more than 5 times. Furthermore, in the West, where most national forests are located, population growth is even more phenomenal. The estimate for the 11 Western States is for a tripling of population in the last half of the 20th century.

Another indicator of special significance from the standpoint of recreational impact on the national forests is the increase in leisure time. The average individual today has about 50 percent more leisure time than in 1920. By the turn of the century an individual may have a third more leisure time than he has today.

The impact of this national growth upon the national forests already has been tremendous as evidenced by recent trends in use. The impact will be even greater in the future. No longer are the national forests the inaccessible and distant hinterlands they were when the system was first established. No longer can the Forest Service be primarily a custodian whose principal function is protection of national forests from fire. Barriers of time, distance, and inaccessibility have been fast fading, especially in the last two decades. The people have found

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2/ The statistics used in this report relate only to the national forests unless otherwise specified; but the objectives and program presented apply to both the national forests and associated land-utilization projects.

the national forests; and their vast resources are in great demand. Management must become progressively more intense and more adequately supported by research findings if the national forests are to keep pace with economic needs and national growth.

The role of the national forests in the national economy, and especially in that of the Western States, cannot be discounted. Nearly half of all softwood sawtimber in the Nation and more than half the commercial forest land in the West is found in the national forests. About one-fourth of the timber cut in the West comes from the national forests.

Nearly one-fifth of the 11 Western States is national-forest land and these lands, because of their mountainous character and generally high elevation, receive one-third of the precipitation and furnish over half the streamflow. Western national forests are major sources of water for 1,800 towns and cities including such major metropolitan areas as Salt Lake City, Seattle, Portland, San Francisco, Los Angeles, and Phoenix. Over 600 hydroelectrical developments depend on the national forests for water.

Irrigation accounts for one-half of the Nation's consumption of fresh water. By 1975 daily use of water is expected to nearly double, an increase which would be equivalent to the daily flow of over 13 Colorado Rivers. Inevitably, western national forests will continue their indispensable role as regulators of the kind and amount of fresh water available to western people.

Similarly in recreation the national forests are of increasing importance because of more leisure time, greater mobility of the average family, increased accessibility or the national forests, and the relatively low cost of a national-forest vacation.

In the West, despite downward ajustments in the numbers of permitted livestock, over one-fifth of the sheep and one-eighth of the cattle graze national-forest ranges. Over one-third of all big game in the Nation is found on the national forests along with 81 thousand miles of fishing streams and over 2 million acres of natural lakes and impounded waters.

National-Forest Progress Since 1953

In his first State of the Union message on February 2, 1953, the President called attention to the vast importance to this Nation now and in the future of the soil and water, the forests and minerals, and the wildlife resources. It was recognized that the Federal responsibility in the field of resource development called for a strong program.

Since that time, substantial and gratifying progress has been made, both financially and physically, in the development and management of the national forests and associated lands.3/ Some of the outstanding achievements that have been accomplished since 1953 should be mentioned.

In timber resource management, the funds available for sales administration and management have risen from 5.9 million dollars in fiscal year 1953 to 13.5 million dollars in fiscal year 1959, and those for reforestation and stand improvement have risen from 1.2 million dollars to 3.0 million dollars. In 1953, 5.2 billion board-feet of timber with a stumpage value of 70.6 million dollars were cut. After reaching a previous peak in 1957, 8.0 billion board-feet with a stumpage value of more than 100 million dollars are expected to be cut in 1959. At the same time, the number of timber sales rose from 24,300 to an estimated 36,000 in 1959. In 1953, the area planted or seeded to trees was 51,200 acres. Almost double that amount is now being planted annually. Timber stand improvement work was done on 387,300 acres in 1953. Today this work is being carried out on approximately 800,000 acres annually.

In 1953, the sum of 2.4 million dollars was available for range resource management: 1.0 million dollars being for range management, $763,000 for range revegetation, and $658,000 for range improvements. In fiscal year 1959, the sum of 4.8 million dollars is available: 1.7 million dollars being for range management, 1.5 million dollars for range revegetation, and 1.6 million dollars for range improvements. During this period, reanalyses and revised range management plans were completed on 2,150 or nearly one-fourth of the 8,790 range allotments. The rate of range reseeding has practically doubled the 53,600 acres reseeded in 1953. During the period 1953 through 1958 nearly a half million acres have been reseeded. During the period 1953 to 1958 inclusive, about 1,600 range water developments have been constructed. Annual rate of construction is double what it was in 1953.

The Federal financing of the construction, rehabilitation, and maintenance of recreational developments has increased from 3.1 million dollars in fiscal year 1953 to almost 10.0 million dollars for fiscal year 1959 and the amounts for wildlife habitat management increased from $223,000 to $805,000. During this same period, the recreation visits rose from 35.4 million in 1953 to 68.5 million in 1958, one-fourth of these being visits from hunters and fishermen. The number of developed campground and picnic sites in 1953 was approximately 4,600, containing 41,100 family units. Most of these were constructed

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3/ Hereinafter referred to as the national-forest system.

in the mid 1930's and were badly in need of rehabilitation. Although the work of rehabilitating these areas had begun a few years earlier, the program for the recreational development of the national forests, called "Operation Outdoors", was prepared and initiated in 1957. As a result, good headway has already been made in the rehabilitation of the developed campground and picnic sites and some new sites have been developed. There are now 5,100 developed campground and picnic sites containing 46,700 family units.

For soil and water management the sum of $137,000 was available in 1953. This has been increased to 1.4 million dollars in fiscal year 1959. The number of national-forest watershed rehabilitation projects increased from 12 in 1953 to 145 in 1958. This work is done specifically to improve and protect watersheds, lessen flood damage, or restore damaged and eroding lands, over and above that normally being done in connection with other national-forest activities.

In fiscal year 1953, there were 22.0 million dollars of Federal funds available for the construction and maintenance of forest development roads and trails. The amount for fiscal year 1959 for this purpose is 35.4 million dollars. In 1953, there were constructed with Federal funds 728 miles of forest development roads. In the 1953 through 1958 period, 5,289 miles have been constructed and it is estimated that 1,062 miles will be constructed in fiscal year 1959. In addition, purchasers of national-forest timber during the period 1953 through 1958, constructed 12,570 miles of forest development roads, with allowances therefor in timber appraisals.

One of the most troublesome problems was the need for housing, particularly to provide suitable housing for field personnel. In 1953, the amount available for structural improvements for fire and general purposes was 3.1 million dollars, practically all of which was for maintenance. This has more than trebled and for fiscal year 1959, the amount is 10.6 million dollars. Since 1953, there have been constructed 602 dwellings and related improvements, 769 service buildings, and 139 lookout structures.

In 1953, the total receipts from the sale of timber and from the use of the range and other surface resources was 76.0 million dollars. It is anticipated that these receipts for fiscal year 1959 will be about 110 million dollars. With these anticipated receipts for 1959, almost 600 million dollars will have been received by the Federal Government since the close of 1953. This is almost 60 percent of the first billion dollars of national-forest receipts reached on November 21, 1958 after the national forests were placed under the administration of the Secretary of Agriculture in 1905. Twenty-five percent of these revenues were distributed for the benefit of schools and roads in the counties.

Federal financing of research bearing on national-forest problems in 1953 was 6.2 million dollars. In 1959, it was 16.5 million dollars, including 2.5 million dollars for construction of research facilities. Any precise allocation of the benefits of forestry research to the support of management and development of the national-forest system is difficult. Generally research projects benefit anyone who protects and manages forest resources regardless of landownership. Thus it serves private as well as public forestry. During this period, forestry research has made substantial and significant contributions to the development, management, and protection of the national-forest system. These include, to name only three, (a) development of a new aerial forest fire control method, with the result that in 1958 more than 1.4 million gallons of chemical fire retardant were dropped on 320 fires in the national forests with a high degree of success; (b) a new technique for fumigating tree nursery soils was perfected in 1957, increasing the efficiency and effectiveness of seedling production; and (c) a patch-type of cutting for lodgepole pine timber was developed for high, mountainous national-forest areas of the Rocky Mountains which increases late spring water yield by 25 to 30 percent because of its influence on snow accumulation and rate of melt.

There have been many other major conservation accomplishments in the management of the national-forest system. New or revised policies have been adopted since 1953 in order that the management of the national forests would be more responsive to the needs of the users. As a result of cooperative effort with both the forest and mining industries, authority was enacted in 1955 and procedures developed to provide for the multiple use of the mineral and surface resources. In 1958, "Timber Resources for America's Future," the most comprehensive study of the timber resources of the Nation, was published and as a result the timber goals for the national forests have been raised substantially. Changes have been made in national-forest grazing policies to give permittees increased stability in the utilization of the grazing resources. The number of public advisory committees at State, regional, and local levels, advisory to the Forest Service on activities covered by this program, has been increased to 170.

The national forests are clearly national in significance because of their impact on our people in both their work and their play. Wood and livestock products from the national forests enter into the commerce of every State; waters flowing from the national forests cross State boundaries; and the millions who hunt, fish, camp, picnic, and ski on the national forests come from every State and every walk of life.

The national forests are federally owned and their multiple-use management to produce a sustained yield of services and products is

a Federal responsibility. Despite the splendid progress that has been made since 1953, these properties with their current assets and enormous potential must be responsive to national needs. In addition, there are opportunities for development primarily of localized significance in collaboration with non-Federal groups, both public and private.

Past trends, present use, and future expectations indicate clearly the need for a planned program of development and use supported by essential research. Resource development is a long-time proposition. What is done in the next 10 to 15 years will largely determine the heritage that our children and their children will receive from the national-forest system.

A National-Forest Conservation Program

The program presented herein is geared to meeting the needs of this short-term period and to preparing the national-forest system to contribute its fair share to the national well-being at the end of the century.

The program is described in terms of both long-range resource objectives to be accomplished by the year 2000, and the specific work which will need to be done in the short-term period to attain these objectives. The program will be carried out as rapidly as possible within the overall budgetary requirements and financial resources of the Federal Government.

Resource Development and Management

The basic renewable natural resources of the national-forest system upon which the Nation will rely to an increasing extent in the years to come are the timber, water, range, and the recreation and wildlife habitat resources. Their intensive development and management is truly a conservation program of great significance to the continued development, prosperity, and welfare of the Nation.

Timber Resources -- The long-range timber goal for the national-forest system is an annual harvest on a sustained-yield basis of 21.1 billion board-feet of sawtimber by the year 2000. This goal is about 3 times the 1957 timber cut. Total sawtimber growth estimated to be needed in the year 2000 to meet national demands is 105.4 billion board-feet. The national-forest goal is that portion of the national need which the national forests could reasonably be expected to produce under intensified management.

The objective is to reach this goal by: (a) Intensifying the management of existing stands, including measures to assure stand improvement and regeneration; (b) growing more and better trees on the lands that are not producing their full capacity today; (c) reducing losses from disease, insects, and fire; and (d) improving utilization. The short-term program steps to further items (c) and (d) are covered later under the headings Protection and Research.

The program proposals for the short-term period are--

1. Harvesting will be increased toward the goal of full sustained-yield cut on all working circles so that annual cut will reach 11 billion board-feet.

2. Harvesting will be developed in a manner that will, to the extent possible: (a) Accelerate cutting of stagnant stands, release advance reproduction by removing overstory

of old growth, and increase the salvage of dead, dying, and diseased trees; and (b) encourage reasonable distribution of sales among small, medium, and larger operators.

3. Develop and apply on sale areas higher standards of regeneration, hazard reduction, salvage, and erosion control.

4. Up-to-date inventories will be obtained for all commercial forest lands and timber management plans will be completed for all working circles. When completed, they will be maintained by periodic reinventories and revisions.

5. Approximately three-fourths of the 4.4 million acres of nonstocked and poorly stocked plantable lands will be seeded or planted.

6. The productive condition of over 11 million of the 30 million acres of less than saw-log size stands will be substantially improved by plantation care, pruning, weeding, thinning, release cutting, reinforcement planting of lightly stocked areas, and planting new burns in these stands.

Water Resources -- In continuing their role as regulator of waterflows, national-forest watershed will continue to be managed in accord with two principal long-range objectives: (a) Protection of the watershed by stabilizing the soil and thereby preserving and improving water quality; and (b) management of the area to increase the quantity of water.

Protection of the watershed and water quality will continue to be a primary objective. Quantity of water yielded will receive major consideration in the multiple-use management of national forests.

To accomplish these objectives, an accelerated program of watershed management, rehabilitation, and protection will need to be carried out, including the application of new methods and practices as they are developed and proved.

Program proposals for the short-term period include--

1. More intensive management activities to assure full protection of the hydrologic condition of watersheds in the management and use of other resources. Management plans for other resources that involve manipulation of plant cover will adequately consider watershed management needs.

2. Reasonable protection to, and minimizing damage from the greatly increasing number of water development projects in and adjacent to the national-forest system.

3. Preparing and maintaining watershed management plans for areas which are the sole or major source of municipal water supplies.

4. Initiating field inventories of water supplies and yield with comparative data as to effects on water yield and quality of range, timber, and other uses and management practices.

5. Complete soil surveys on about 33 million acres, or 22 percent of the total area in need of survey.

6. Watershed rehabilitation measures to stabilize gullies and channels, control sheet erosion, stabilize dunes and earth slides, control erosion on roads and trails, and accomplish water spreading will be done in varying degrees ranging from one-tenth to one-third of the total work needed. Work scheduled includes 10,000 miles of gully and channel stabilization; 1.3 million acres of sheet erosion control; 20,000 acres of dune and blowout stabilization; erosion control on 14,000 miles of substandard roads and trails; 5,600 acres of water spreading; 535 structures for flood prevention; and 170 stream pollution control projects.

Range Resources -- The development and management of the 68 million acres of rangeland in the national-forest system has two major long-range objectives:

(a) Proper stocking and improvement of the range resource to achieve desirable watershed conditions and sustained high-level production of forage. Over many years the Forest Service has attempted to bring livestock numbers into balance with available forage. This is being done by building up forage production through reseeding, other range-improvement measures, and better management. Where this is not sufficient, necessary adjustments to grazing capacity have been made in either numbers of permitted livestock or season of use.

(b) Making lands suitable for livestock grazing available for use under conditions that promote stability for communities and individuals, and encourage full development of the range resource with due regard to other resources and uses.

These policies can be furthered by intensifying management of all range allotments; obtaining and maintaining desirable forage to high capacity; constructing, rehabilitating, and maintaining range improvements needed to attain intensive management on all ranges; and making adjustments in numbers of livestock or seasons of use when necessary.

In order to make substantial progress toward the long-range objectives, the short-term program proposals are--

1. Complete and thereafter keep current range analyses and management plans on all range allotments.

2. Where stocking adjustments are necessary to balance utilization and available forage, these will be carried out as rapidly as practicable bearing in mind the needs of the range and other factors.

3. Separation of cattle and sheep grazing on common use areas, and substantial reduction of livestock trespass.

4. Properly coordinate all range use with other resource use.

5. Revegetation and control of noxious or poisonous range plants and farm weeds will be undertaken on about 4.4 million acres of rangelands needing one or both treatments.

6. Reconstruction or rehabilitation of presently deteriorated range improvements will be completed; other improvements will be maintained.

7. Construct 18,000 miles of fences and 9,500 water developments to initiate programs of intensive range management for control of livestock and more efficient use of forage.

Recreation and Wildlife Habitat Resources -- As previously described, the growth and development of the Nation already has had a terrific impact on the national forests in increased use of the recreation and wildlife habitat resources. It is estimated that these uses will rise from the 68.5 million recreation visits of 1958 to 130 million visits by 1969, with a continued rapid annual increase to a possible 600 million visits by the year 2000. This expected increase to nearly double the present use by 1969 and about nine times the present use by the year 2000 is far in excess of the expected rate of increase in population.

The long-range objective is that: (a) National-forest recreation resources will be so developed and managed that the kind, quality, and quantity of their development and maintenance will be sufficient to keep abreast of this tremendously increased demand; and (b) the wildlife habitat will yield a fish and game population adequate to meet the equally tremendous increase in sportsmen use.

The program proposals for the short-term period are--

1. Complete "Part 1 of Operation Outdoors," which is a 5-year

program initiated in 1957 to reconstruct and rehabilitate the then existing recreation facilities consisting of 4,700 campgrounds and picnic sites containing 42,400 family units, construct additional facilities, and adequately maintain and service these facilities to meet the existing and predicted situation.

2. Complete inventory and evaluation of recreation and wildlife habitat resources. This will be done partly in cooperation with the Outdoor Recreation Resources Review Commission, and with respect to wildlife habitat resources, in cooperation with the States.

3. Revise and complete recreation management plans for all administrative units and thereafter keep them current.

4. Prepare and execute development plans on 10,000 new campground and picnic sites containing 102,000 family units.

5. Repair and reconstruct dams and spillways as necessary in order to place them in a safe condition for recreational use.

6. Provide adequate sanitation, cleanup, safe water, fire prevention, and public safety at all developed recreation sites and in heavily used unimproved areas.

7. Protect and manage wilderness-type, roadside, and other special areas.

8. Review at least 30 of the remaining 41 primitive areas as to their wilderness characteristics and reclassify them accordingly.

9. Revise and complete wildlife habitat management plans for all administrative units, assuring proper coordination between uses of wildlife habitat resources and other resources.

10. Participate in planning, inspection, and control phases of all habitat improvement projects conducted on lands of the national-forest system by States and by other Federal agencies to insure that the projects will benefit wildlife and be in harmony with other resource values.

11. Improve food and cover on 1.5 million acres of key wildlife areas.

12. Develop wildlife openings, food patches, and game walkways in dense vegetation by clearing or controlled burning on about a half million acres.

13. Improve 7,000 miles of the 81,000 miles of fishing streams and 56,000 acres of lakes by stabilizing banks, planting streamside cover, and constructing channel improvements.

Protection

The total adverse impact of disease, insects, fire, weather, destructive animals, and other forces on the uses and values of forest resources is not generally recognized. They kill and destroy, retard or prevent reproduction and growth, impair and damage values, and disrupt uses.

The total growth impact on sawtimber from destructive agencies in the continental United States and coastal Alaska in 1952 was estimated to be equal to 92 percent of the net sawtimber growth. Cause of the impact on sawtimber growth was distributed 45 percent to disease, 20 percent to insects, 17 percent to fire, and 18 percent to all others.

These destructive forces also have a seriously adverse effect upon the watersheds and their life-supporting waterflows, and upon the other renewable forest resources.

The long-range objective is to hold the damage from destructive agencies below the level which would seriously interfere with intensive management of the national-forest system under principles of multiple use and high-level sustained yield of products and services. This can be accomplished substantially by a continued trend toward better facilities and techniques for fire control and more resources to cope with critical fire periods, and a more intensive application of a program of prevention, detection, and control of insects and disease infestations. In addition to direct protection measures, more intensive management of timber resources will result in reduction of losses from insects and disease.

Protection From Insects and Disease -- In the short-term period, it is proposed that insect and disease control on the national-forest system be stepped up to a level of prevention, detection, and control of insect and disease infestations that will substantially reduce the occurrence of large infestations toward the end of the initial period. This will require about a 50 percent increase over the present level of protection. The work will consist of--

1. Intensification of present activities through (a) quicker, more extensive, and more thorough surveys to detect incipient outbreaks; (b) more reliable evaluation of the potential of initial outbreaks to cause widespread damage; (c) quicker and more effective control action in the initial stages to prevent a large-scale epidemic. The initial suppression activities would cover about twice the acreage currently being treated.

2. Continuation of present blister rust control work plus extension of control to 250,000 acres not now protected but which should be managed for white pine production. The objective is to achieve sufficient effectiveness of control on all of the area now under treatment plus the additional acres so that after the initial period only maintenance control will be needed.

3. Initiating a program to control dwarfmistletoe on several hundred thousand acres of selected better stands of young softwood sawtimber on better growing sites.

4. Coordination of timber harvesting with pest control objectives in order to reduce the loss from high-risk old-growth trees and to reduce the possibility of old-growth stands serving as a focal point of infection.

Protection From Fire -- It is proposed that by the end of the initial period all commercial timberlands, all critical watersheds, and other lands in the national-forest system developed or proposed for intensive use will be given protection from fire adequate to meet the fire situation in worst years and under serious peak loads. This will include 125 million acres compared to 23 million acres now receiving such protection. An additional 15 million acres will be given a lesser degree of protection but adequate to meet the average fire situation.

Meeting these levels of protection from fire calls for--

1. Expansion, modernization, and development of fire control to a proficiency and strength of force which will prevent as many fires as possible and suppress fires before they spread beyond permitted standards. This is to be accomplished by nearly doubling the present level of preventive effort, detection, skilled fire-fighting crews, training, supervision, and equipment.

2. Development and use of new and modern techniques for prevention, for suppression of fires while small, and for stopping large fires while running and burning intensely.

3. Reduction of hazardous fuel conditions to minimize the chances of large fires developing and spreading to high-value areas. This work will cover the most serious one-fourth of all land needing such treatment, and will consist of burning 300,000 acres of highly hazardous debris concentration, felling snags on 320,000 acres of high lightning-occurrence areas, prescribed burning on 3.5 million acres, removing roadside fuel on 37,000 acres, and clearing and maintaining 12,000 miles of firebreaks.

Protection From Other Damage -- Rodent control work for the short-term period will be aimed at control of the most serious infestations of harmful rodents, such as porcupines and mice, on high-value areas of forage and commercial timberlands. These areas comprise about half of the total area of rodent infestation on the national forests. Approximately 1.8 million acres of rangelands and 9.4 million acres of timberlands would be treated in this period. Control would be limited to those rodents for which economical means of control are known.

Roads and Trails

The road and trail system which serves the national-forest lands is a complex of highways and access roads and trails under various ownerships and jurisdictions. This transportation system is vital to the multiple use of all the resources of the national-forest system.

For administrative purposes, the road and trail facilities are grouped into a forest highway system and a forest development road and trail system. All these facilities benefit the national forests. There are now 24,400 miles of forest highways; 149,700 miles of forest development roads, and 112,200 miles of trails. When fully installed, there will be about 70,000 miles of forest highways; 542,000 miles of access roads, and the trail network will be reduced to about 80,000 miles.

The forest highway program is administered by the Bureau of Public Roads in the Department of Commerce. The forest highways are therefore not included in the program herein outlined.

An adequate system of roads and trails is essential to proper management of forest lands. The presence or lack of access roads has a direct and controlling influence on many phases of forest management, such as the volume of timber that can be marketed; the size, duration, and distribution of sales within working circles; the level of salvage cutting; protection of national-forest resources from fire, insects, and disease; and recreational and forage use.

Financial losses occur every year to the Federal Government through inability to market mature timber now inaccessible but in need of harvesting, and to promptly and completely salvage losses resulting from fire, windstorms, insects, and diseases. As the road and trail system is expanded the revenue to the Government increases, primarily through expanded timber sales. Timber access roads for the national-forest system are investments which will pay for their own way over a period of years.

The long-range objective is to have and maintain a system of roads and trails to service the national forests adequately at the levels needed to meet expected demands. Such a system will not only make that possible, but will at the same time enhance the value of the timber and other resources being utilized.

Construction of about 392,600 miles of new roads and 6,000 miles of new trails will ultimately be needed, along with reconstruction of about 112,600 miles of roads and 11,300 miles of trails. Also about 41,400 miles of existing trails will be replaced by construction of new roads.

In the short-term period the program proposals are--

1. Complete construction and reconstruction of about 90,000 miles of access roads and 8,000 miles of trails. This constitutes about 19 percent of roads and trails included in the long-range objectives. Approximately half of the value of the work on timber access roads planned for this period will be constructed by national-forest timber purchasers, but paid for by the Government through adjustment of stumpage prices.

2. Provide maintenance to full standards on the 261,900 miles of existing development roads and trails and on 58,600 miles of new construction.

Land Adjustment and Uses

Effective management of the national-forest system requires reasonable consolidation of ownership where there are intermixed public and private lands. Accomplishment of these ownership adjustments will contribute much toward meeting resource demands by the year 2000 and will be largely accomplished by that time.

In the initial period, national-forest boundary and ownership classification studies will be completed for all national-forest lands as the basis for landownership adjustment. Such adjustments will be brought about mainly by exchanging on a land-for-land basis approximately 1.4 million acres of scattered or checkerboard national-forest parcels for other lands needed to consolidate the national-forest land pattern. This will (a) enable national-forest boundaries to be modified to exclude about 11 million acres of private and State land from within national-forest boundaries; and (b) materially reduce the checkerboard pattern of ownership. Special attention will be given to completion of consolidation of national-forest ownership in the Boundary Waters Canoe Area and in certain key watersheds of the Cache National Forest in Utah. In addition, about 217,000 acres of land utilization project lands will be exchanged in the initial period to promote more effective management of such projects. Thereafter there will be a continuing program in the national forests and related areas to adjust ownership problems and further consolidate these public properties.

There must also be accomplished in the short-term period: (a) Development of an improved and more adequate land status record system with

provision for continuous maintenance; and (b) establishment and marking of public property corners and the surveying and posting of over 100,000 miles of property lines between national-forest and other lands which now are inadequately located and marked.

The uses of national-forest lands for many special purposes, including the extraction of mineral resources, will continue to increase at a rapid rate. The supervision of these uses will need to keep pace in order that such uses can be properly correlated into multiple-use management of the national-forest system, and to prevent unauthorized use. The program for the determination of surface rights which has been under way since the approval of the Act of July 23, 1955, will be completed.

Administrative Structures and Equipment

To facilitate the resource management and development work, construction and maintenance of administrative and fire control improvements will need to be provided at an increased rate in the short-term period. This will consist of completing the present backlog of housing needs for field officers and of administrative and fire improvements, and the construction of additional housing and improvements. New construction needs include 2,730 dwellings and related improvements, 2,710 service buildings, and 530 lookout structures. Completion of the communications system needed for protection and management of the national forests will require 2,000 additional radios and replacement of 9,000 radios and 3,000 miles of telephone lines. The increasing use of aircraft as an efficient and economical means of transportation for protection and management of wild lands will require an additional 25 landing fields and reconstruction of 37 existing fields.

Research

Forestry and allied research is needed to keep the national forests and the utilization of their resources moving ahead on an efficient, effective, and economical basis to play their proper role in the progress and development of the Nation. Resource managers and administrators need answers to their everyday problems. Resource development, management, protection, and utilization have an additional need, and organized research has an additional objective to achieve significant break-throughs that will show the way to new methods and new horizons in the management of timber, soil and water, forage, wildlife habitat, and recreation resources. The short-term research program is needed to yield both quick results of applicability during the initial period, and information of value in attaining long-range objectives.

The research proposals for the initial period embrace work that should yield information of wide application of high value. These proposals include--

1. Accelerated research in forest genetics to produce trees superior to present ones--in growth rate, wood quality, resistance to insects and diseases, and other special qualities--for use in the needed planting programs on national forests.

2. Development of new cultural practices to increase the production of high-quality seed through establishment and management of seed orchards; better methods of harvesting, storing, and processing of seed; and more efficient planting practices, including direct seeding with aircraft.

3. Better implementation of the national-forest pest control program by developing a broader knowledge of the life histories of damaging insects and diseases and of new methods for controlling them through use of diseases and predators of the pests themselves, as well as through improved selective chemicals for use in direct control action.

4. Better implementation of the national-forest fire control program by developing a better understanding of fire behavior and new techniques and equipment needed to eliminate the runaway fires now responsible for 90 percent of fire losses in the national-forest system.

5. Development of new and improved practices required to facilitate good watershed management so vitally important to the management of national-forest timber and range resources. This will include studies of water yields, both quality and quantity, and management of snowpacks at high elevations and soil stabilization.

6. Design and evaluation of new and improved equipment for logging without damage to watershed values--as by an overhead cable system in order to extend harvesting operations into steep mountainous slopes not now operable by ground skidding methods; and equipment to increase the efficiency of woods-utilization of forest products.

7. Improvement of volume and yield tables, rotation age data, and other information for regulating timber growing-stock levels for use in the national-forest timber-management plans.

8. Development of silvicultural bases to guide timber harvesting and regeneration practices in new forest types and areas, particularly in Alaska and the more remote areas of the western national forests to be newly reached in sustained-yield operations.

9. Continuing investigations of the physical and chemical properties of wood and of processing methods to increase the efficiency of forest products utilization from national-forest timber-sale areas.

10. Development of new uses for the large volume of low-quality timber, for logging and milling residues, and for thinnings in order to broaden the utilization and market base, and to facilitate timber sales and sustained-yield management.

11. Development of log and tree grades and other information needed in the marketing of national-forest timber.

12. Development of improved livestock-grazing management practices on the national forests to increase forage yields and to protect watershed values.

13. Develop methods of improving national-forest wildlife habitat through modified timber and range management practices, as well as through development of special measures such as propagation of browse and other game foods.

14. Determination of the needs and preferences of recreational uses of the national forests, and of the carrying capacities of campgrounds and other recreational areas in order to guide the development and management of the recreational resources.

15. Provision for laboratories, greenhouses, and other facilities, including modern scientific equipment, required to adequately implement the research program. This will consist of expansions through new construction and betterment of existing facilities. The needs include 17 specialized laboratories and related greenhouse and service facilities for the basic research on forest insects and diseases, tree genetics and physiology, forest soils and hydrology, forest fires, and forest products, and for development of new equipment for fire fighting and for harvesting timber; 5 office-laboratory buildings at regional headquarters of forest and range experiment stations; 25 office-laboratories at centers of field research and minor structures, fencing, stream gages, and other research installations that will be required on about 100 experimental forests and ranges.

Program Benefits

Under the proposed program, management and utilization of national-forest resources will keep pace with population growth and national economic development and needs.

Many of the benefits from the program for the short-term period will carry over or will be delayed until after the end of the period. Investments in such measures as roadbuilding, tree planting, range reseeding, water conservation, research, recreation, and other improvements proposed in the initial period are geared not only to short-term

needs, but also to the longer-range objectives of meeting expected demands on the national forests during the remainder of the century.

Benefits include direct financial revenues, secondary benefits, and intangible values.

Direct financial revenues from the national-forest system will rise to about 210 million dollars annually by the time the short-term conservation program is completed, or double current receipts. Over 90 percent of such revenues will continue to come from the sale of standing timber. By the year 2000 national-forest timber sales should reach 21 billion board-feet of sawtimber worth 350 million dollars at 1958 prices.

Payments from national-forest revenues for county schools and roads will increase correspondingly. These increased payments to counties, coupled with increased national-forest expenditures for roads and fire control, will exceed the taxes that the national-forest system would pay, if subject to local taxation, by an even greater margin at the end of the initial period than at the present time.

The capital value of the timber, forage, and lands of the national-forest system will have increased by about a billion dollars as a result of the short-term conservation program.

In addition to direct financial income to the United States as a result of the national-forest conservation program, there will be both substantial secondary benefits and very real intangible benefits.

Secondary benefits include such things as numbers of people employed in the harvesting of national-forest timber and other products and the value added to those products by manufacture, distribution, and marketing.

In timber alone, it is estimated that for every dollar of national-forest stumpage sold the end products will be worth 20 dollars by the time they reach the ultimate consumer. This means that the annual sale of 11 billion board-feet of sawtimber expected to be reached by the end of the short-term period will have a total consumer value of 3.7 billion dollars.

Furthermore, some 620,000 people will derive their livelihood from the harvesting, processing, hauling, and merchandising of national-forest timber and the products made therefrom. This will be an increase of 60 percent over the current level.

Similarly, the value of meat, hides, wool, and other livestock products increases with reprocessing and handling as do the numbers of dependent people.

It is estimated that recreational use of the national-forest system will reach 130 million visits by 1969, in contrast to the 68.5 million visits in 1958, and a probable 600 million by 2000. The recreationists making these 130 million visits will put into trade channels a total of nearly a billion dollars for sporting equipment, transportation, licenses, lodging, and other items.

Most of the truly intangible values of the national forests are experienced by those millions of people who use the national forests for reasons other than commercial utilization of resources. No measure of value expresses the worth of the relaxation, pleasure, rest, spiritual satisfaction and improvement in health derived from the national forests.

No realistic dollar value can be placed on water from the national forests. Water is already the most precious commodity in the West and over half of all waterflow in the West originates on the national forests. These lands will continue indefinitely to be indispensable regulators of the kind and amount of fresh water available to western people. The national-forest water conservation program will improve soil stabilization, result in more regular streamflow, and enhance water quality. It will foster infiltration of water in underground storage. These results will lessen the need for construction of surface reservoirs, settling basins, and other water construction works.

Nor can there be any complete assessment in dollars of the lives saved, damage prevented, and resources preserved by improved accessibility, suppression of insect and disease epidemics, fires prevented or controlled when small, and reduction and prevention of floods. All of these are benefits of the conservation program proposed for the national forests.

Substantial progress has been made. The foundation for progress is in place. This program builds on that foundation. The result will be full development of these extensive and valuable public properties.

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